

ABSTRACT OF THE DISCLOSURE

A linear switch actuator for actuating a movable element within a microwave switch includes a ferromagnetic shield, a coil positioned within, and a movable armature assembly positioned within the coil. The armature assembly is coupled to the movable element and includes a ferromagnetic rod and first and second permanent magnets. The permanent magnets are coupled on either end of the rod and have opposite pole orientations. The armature assembly moves between first and second stroke end positions. When one of the permanent magnets is positioned substantially outside the shield, the magnetic permeance of the armature assembly is maximized, and the armature assembly experiences bi-stable latching between the two stroke end positions. When the coil is energized, the armature assembly moves between these positions due to magnetic interaction between the energized coil and the field associated with the permanent magnets and the solenoid magnetic field associated with the coil which reduces the magnetic permeance associated with said armature assembly.